KITT PEAK
NATIONAL OBSERVATORY

". . . to strengthen basic research and education in astronomy throughout the United States and its territories and possessions."

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Kitt Peak was selected as the site for a national astronomical observatory after a survey and testing program that lasted three years and included over 150 mountain ranges, mostly in the southwestern part of the U.S. The survey employed all available media from rocket photographs to foot and horseback travel. Kitt Peak's combination of frequent clear weather, minimum of air turbulence, remoteness from bright lights, vegetation cover, suitable summit area, and supporting city with a university resulted in its selection in 1958.

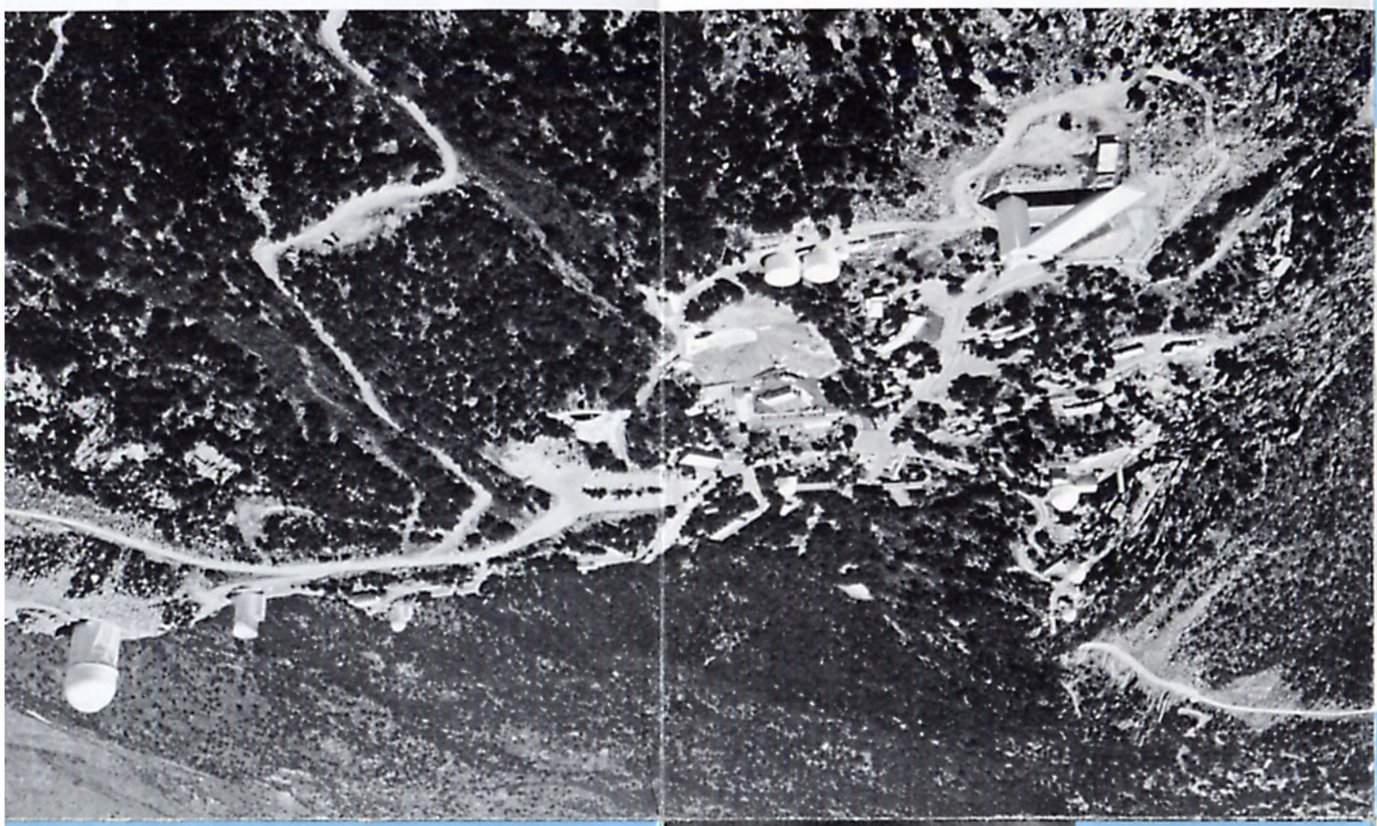
Kitt Peak is located in the Quinlan Mts. of the northern Sonora Desert, 53 road miles southwest from Tucson city limits. The average rainfall at the summit is approximately 18 inches per year. Frequent thunderstorms occur during July and August, while snow may be expected in January through March. The temperature seldom exceeds 90°F. in summer, or falls below 10°F. in winter.

The Observatory does not yet have facilities for the distribution or sale of astronomical photographs.

The Observatory is open from 10:00 A.M. to 4:00 P.M. daily, including holidays

Cover Photograph

The Trifid Nebula in the constellation Sagittarius. A concentration of stars, dust, and glowing gas about 3500 light years distant that is about half the apparent diameter of the full moon.



THE PAPAGO INDIANS

Kitt Peak is located on the Papago Indian Reservation, which is one of the largest in the United States, comprising 2.7 million acres. Some 7,500 Papagos reside in the area. Small villages of from 10 to 15 families dot the area, with the Papago Headquarters being at Sells, 20 miles west of Kitt Peak. The Tribe is organized on democratic principles, with a Tribal Council made up of elected representatives from 11 districts and an elected Chairman.

The Papagos have leased Kitt Peak to the Observatory under the terms of a perpetual agreement that runs so long as a scientific research facility is maintained at the site. Both the Papago Tribe and the Observatory have benefited from their mutual cooperation.

THE NATIONAL SCIENCE FOUNDATION AND AURA

The National Science Foundation, an independent agency of the United States Government, has supported the Observatory from its inception. The Foundation, which is responsible for support of basic research throughout the United States, executed a contract with the Association of Universities for Research in Astronomy, Inc., (AURA) in December 1957 during the final days of the site survey. With the selection of the Kitt Peak site, AURA located its headquarters in Tucson and commenced construction. AURA, a non-profit corporation in Arizona, also was formed in 1957; the following Universities are members:

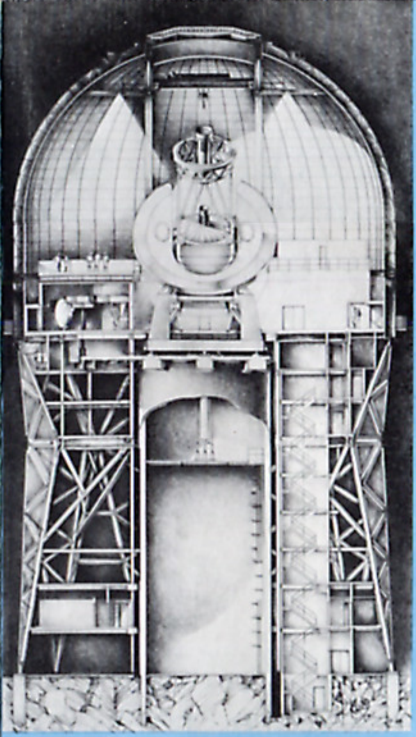
- University of California
- University of Chicago
- Harvard University
- Indiana University
- University of Michigan
- The Ohio State University
- Princeton University
- University of Wisconsin
- Yale University
- University of Texas
- University of Arizona
- California Institute of Technology

WHY ASTRONOMY?

A characteristic of intelligent beings is that they have a curiosity about the things around them; they are not satisfied as long as the lands beyond the distant mountains, or in central Africa, or near the poles, are a mystery to them. Also they are curious about the animals that live in the oceans, the origin of the mountains, the composition of the center of the earth, and the nature of molecules and atoms. These things, and many more, have been studied in organized and objective ways, called sciences, to increase knowledge by basic research.

Since oldest times men have also wondered about the things they see in the sky, and they have invented strange explanations for their existence. Gradually their superstitions and fears of these objects have been replaced by knowledge of their origin and nature; idle speculation has been replaced by the science of astronomy. Few people any longer believe that the appearance of a comet in the sky heralds the coming destruction of the earth, but there are still many things that we would like to know about comets and other objects in the sky. In the coming decade some of these things will be learned from space vehicles and perhaps from on-the-spot exploration, but more will probably be learned from ground-based observations.

Astronomy has direct application to our immediate needs and comforts, such as navigation and timekeeping, but primarily it is concerned with the understanding of the universe in which we live, and its origin and future.



This drawing of the 150-inch Telescope building shows the telescope on its 100-foot-high pier, well above the disturbing effects of heat currents from the ground.

OBJECTIVES

AURA's objective is to provide up-to-date research facilities for American astronomers. As new types of equipments are developed and new advances are made in optical astronomy, the facilities and staff of the Observatory will grow accordingly.

Three scientific divisions are contained within the organizational structure of the Kitt Peak National Observatory. They are:

STELLAR DIVISION — Performs basic research on galaxies, stars, nebulae, and the solar system (except for the sun), currently utilizing two 16-inch reflecting telescopes, two 36-inch reflecting telescopes, a 50-inch reflecting telescope and an 84-inch reflecting telescope.

SOLAR DIVISION — Performs basic research in solar astronomy by use of the world's largest solar telescope.

PLANETARY SCIENCES DIVISION — Conducts planetary research by means of ground-based observations and rocket-borne experiments, supplemented by laboratory and theoretical analysis and by planetary probes launched by NASA. The Division's rocket facilities are available to qualified university astronomers for astronomical research.

KITT PEAK
NATIONAL OBSERVATORY
BOX 4130, TUCSON, ARIZONA
85717

Thank You...

We appreciate your cooperation while visiting the Observatory. By following the guide maps and complying with sign requests, you have enabled us to continue our primary objective of research in astronomy. We also appreciate your interest in our efforts and hope that your visit has been worthwhile.

KITT PEAK

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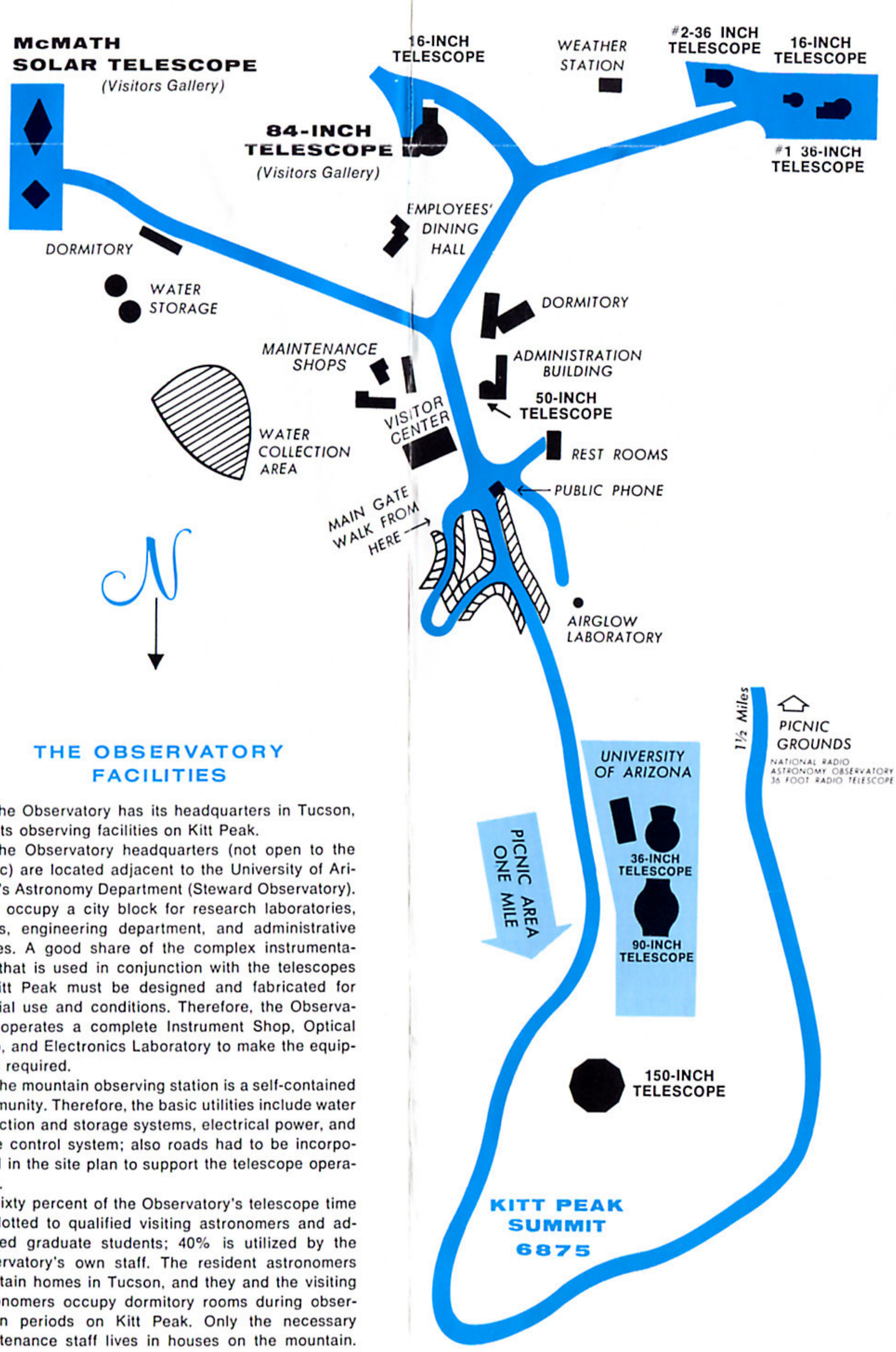


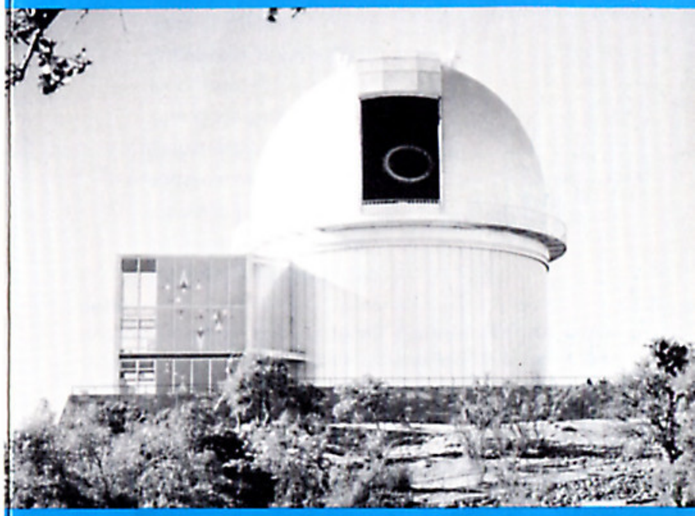
THE OBSERVATORY FACILITIES

The Observatory has its headquarters in Tucson, and its observing facilities on Kitt Peak.

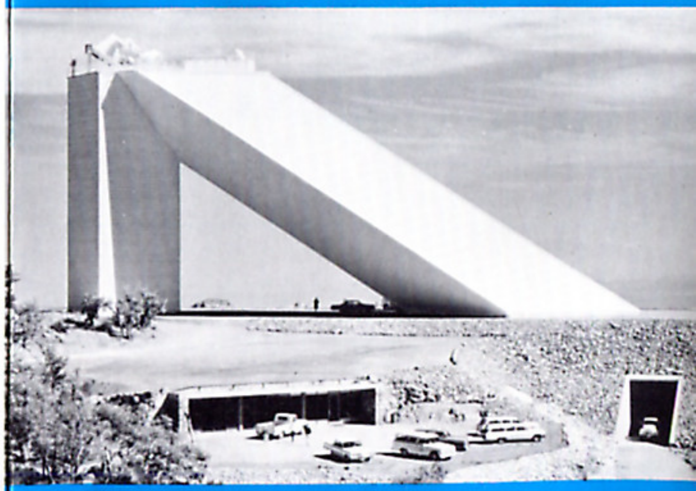
The Observatory headquarters (not open to the public) are located adjacent to the University of Arizona's Astronomy Department (Steward Observatory). They occupy a city block for research laboratories, shops, engineering department, and administrative offices. A good share of the complex instrumentation that is used in conjunction with the telescopes at Kitt Peak must be designed and fabricated for special use and conditions. Therefore, the Observatory operates a complete Instrument Shop, Optical Shop, and Electronics Laboratory to make the equipment required.

The mountain observing station is a self-contained community. Therefore, the basic utilities include water collection and storage systems, electrical power, and a fire control system; also roads had to be incorporated in the site plan to support the telescope operations.

Sixty percent of the Observatory's telescope time is allotted to qualified visiting astronomers and advanced graduate students; 40% is utilized by the Observatory's own staff. The resident astronomers maintain homes in Tucson, and they and the visiting astronomers occupy dormitory rooms during observation periods on Kitt Peak. Only the necessary maintenance staff lives in houses on the mountain.



The 84-inch telescope, named for the diameter of its f/2.6 primary mirror, is used to determine the compositions, motions, brightnesses, colors, and other characteristics of stars and nebulae. Cameras, photometers, and a spectrograph will be used at the Cassegrain focus. The rectangular extension to the south of the dome (not shown) houses the coude spectograph, which has cameras from 2 to 20 feet long that permit powerful analysis of the light of stars and nebulae.



The Robert R. McMath Solar Telescope is the largest telescope in the world built for solar observations. Together with its vacuum spectrograph, it will be used to analyze the composition, magnetic field-strength, motion, and physical nature of various areas on the sun.

The 150-inch Telescope, the second largest telescope in the United States, will be equipped with sensitive instruments to study very faint stars and galaxies.

The Observatory is located 42 miles west of Tucson on Ariz. 86 and 12 miles south on Ariz. 386.